

## **REMARKS**

### **I. Introduction**

With the cancellation herein without prejudice of claims 41 and 42, claims 17 to 40 are currently pending in the present application. In view of the foregoing amendments and the following remarks, it is respectfully submitted that all of the presently pending claims are allowable, and reconsideration is respectfully requested.

Applicants thank the Examiner for considering the previously filed Information Disclosure Statements, PTO-1449 papers and cited references.

### **II. Oath/Declaration**

As regards the declaration, a supplemental declaration will be submitted under separate cover.

### **III. Objection to Claims 41 and 42**

While Applicants do not agree with the merits of this objection, to facilitate matters, claims 41 and 42 have been canceled herein without prejudice, thereby rendering moot the present objection. Withdrawal of this objection is therefore respectfully requested.

### **IV. Rejection of Claims 17, 19, 30, 31, and 41 Under 35 U.S.C. § 102(e)**

Claims 17, 19, 30, 31, and 41 were rejected under 35 U.S.C. § 102(e) as anticipated by U.S. Patent No. 6,120,925 ("Kawatsu et al."). Applicants respectfully submit that Kawatsu et al. do not anticipate the present claims for the following reasons.

Claim 41 has been canceled herein without prejudice, thereby rendering moot the present rejection with respect to claim 41.

Claim 17 relates to a fuel-cell system and recites that the fuel-cell system includes an oxidation device configured to convert carbon monoxide into carbon and includes a water-injection device configured to inject water into the oxidation device. Claim 17 has been amended herein without prejudice to recite that the oxidation device is configured to convert carbon monoxide by a reaction of carbon monoxide with oxygen of the injected water, and that a reduced amount of a supplemental oxygen containing substance is supplied to the oxidation device based

on the oxygen of the injected water. Support for the amendment to claim 17 may be found, for example, on page 5, lines 5 to 9 of the Specification.

Kawatsu et al. purport to relate to an apparatus for and method of reducing concentration of carbon monoxide and fuel-cells generator system with such apparatus. While Kawatsu et al. mention that a supply of water is fed to a selective CO oxidizing unit, the water is only supplied to cool selective CO oxidizing catalysts stored in the selective CO oxidizing unit. That is, Kawatsu et al. do not disclose, or even suggest, that the CO oxidizing unit is configured to oxidize carbon monoxide into carbon dioxide by a reaction with oxygen of the supplied water. Rather, Kawatsu et al. describe feeding an oxygen-containing oxidizing gas to the oxidizing unit and state that “[t]he catalyst in the oxidizing unit enables oxygen included in the introduced oxidizing gas to be bonded to the carbon monoxide,” col. 2, lines 28 to 30 (emphasis added). It is therefore respectfully submitted that Kawatsu et al. do not disclose, or even suggest, an oxidation device configured to convert carbon monoxide into carbon dioxide by a reaction with oxygen of supplied water.

Furthermore, nowhere do Kawatsu et al. disclose or suggest a system in which a reduced amount of supplemental oxygen containing gas is supplied based on an amount of oxygen supplied by injected water.

In response to Applicants' arguments presented in the Response filed January 30, 2004, the Examiner indicated that claim 17 did not recite limitations structurally different from that of the structure of Kawatsu et al. Claim 17, as amended herein without prejudice, recites that the structure of the oxidation device is such that it is configured to convert carbon monoxide by a reaction with oxygen supplied by injected water. Kawatsu et al. do not disclose or suggest an oxidation device structured in this manner. Furthermore, claim 17, as amended herein without prejudice, recites that the fuel-cell system is structured so that a reduced amount of a supplemental oxygen containing substance is supplied to the oxidation device based on the oxygen supplied by the injected water. Kawatsu et al. do not disclose or suggest a system structured in this manner.

It is therefore respectfully submitted that Kawatsu et al. do not anticipate claim 17.

As for claims 19, 30 and 31, which ultimately depend from claim 17 and therefore include all of the limitations of claim 17, it is respectfully submitted that

Kawatsu et al. do not anticipate these dependent claims for at least the same reasons given above in support of the patentability of claim 17.

**V. Rejection of Claims 17 to 19, 30 to 33, and 39 to 42 Under 35 U.S.C. § 102(e)**

Claims 17 to 19, 30 to 33, and 39 to 42 were rejected under 35 U.S.C. § 102(e) as anticipated by U.S. Patent No. 6,001,499 ("Grot et al."). Applicants respectfully submit that Grot et al. do not anticipate the present claims for the following reasons.

Claims 41 and 42 have been canceled herein without prejudice, thereby rendering moot the present rejection with respect to claims 41 and 42.

As indicated above, claim 17 has been amended herein without prejudice to recite that the oxidation device is configured to convert carbon monoxide by a reaction with oxygen of the injected water, and that a reduced amount of a supplemental oxygen containing substance is supplied to the oxidation device based on the oxygen of the injected water.

Claim 18 has been amended herein without prejudice in an analogous manner as claim 17.

Claims 32 and 33 relate to a method for generating electrical energy using a fuel-cell system and recites that water is injected during an oxidizing step. Claims 32 and 33 have been amended herein without prejudice to recite that a supplemental oxygen containing substance is supplied for the oxidizing step. Support for the amendment to claims 32 and 33 may be found, for example, on page 5, lines 5 to 9 of the Specification.

Grot et al. discuss a shift reactor in which water is injected into a methanol reformat/effluent exiting a reformer. Grot et al. further discuss injecting controlled amounts of air into a PROX reactor. However, nowhere do Grot et al. disclose, or even suggest, an oxidation device into which is injected water and a supplemental oxygen containing substance. Nowhere do Grot et al. disclose, or even suggest, injecting water and supplying a supplemental oxygen containing substance for a single oxidizing step. Thus, Grot et al. do not disclose, or even suggest, each limitation in any of claims 17, 18, 32, and 33.

It is therefore respectfully submitted that Grot et al. do not anticipate any of claims 17, 18, 32, and 33.

As for claims 19, 30, and 31, which ultimately depend from claim 17 and therefore include all of the limitations of claim 17, it is respectfully submitted that Grot et al. do not anticipate any of these dependent claims for at least the same reasons given above with respect to the patentability of claim 17.

As for claims 33, 39, and 40, which depend from claim 32 and therefore include all of the limitations of claim 32, it is respectfully submitted that Grot et al. do not anticipate any of these dependent claims for at least the same reasons given above with respect to the patentability of claim 32.

**VI. Rejection of Claims 17, 22 to 25, and 28 to 30 Under 35 U.S.C. § 103(a)**

Claims 17, 22 to 25, and 28 were rejected under 35 U.S.C. § 103(a) as unpatentable over the combination of U.S. Patent No. 5,630,679 ("Buswell et al.") and Kawatsu et al. It is respectfully submitted that the combination of Buswell et al. and Kawatsu et al. does not render unpatentable the present claims for the following reasons.

As indicated above, claim 17 has been amended herein without prejudice to recite that the oxidation device is configured to convert carbon monoxide by a reaction with oxygen of the injected water, and that a reduced amount of a supplemental oxygen containing substance is supplied to the oxidation device based on the oxygen of the injected water.

Claim 28 has been amended herein without prejudice in an analogous manner as claim 17 as claim 17.

As further indicated above, Kawatsu et al. do not disclose, or even suggest the features of claim 17. Similarly, Kawatsu et al. do not disclose, or even suggest the features of claim 28. Buswell et al. are not relied upon for disclosing or suggesting the limitations of claims 17 and 28 not disclosed or suggested by Kawatsu et al. Indeed, it is respectfully submitted that Buswell et al. do not disclose or suggest the limitations of claims 17 and 28 not disclosed or suggested by Kawatsu et al. It is therefore respectfully submitted that the combination of Kawatsu et al. and Buswell et al. does not render unpatentable claims 17 and 28.

As for claims 22 to 25, and 30, which ultimately depend from claim 17 and therefore include all the limitations of claim 17, it is respectfully submitted that the combination of Kawatsu et al. and Buswell et al. does not render unpatentable

these dependent claims for at least the same reasons given above in support of the patentability of claim 17.

As for claim 29, which depends from claim 28 and therefore includes all of the limitations of claim 28, it is respectfully submitted that the combination of Kawatsu et al. and Buswell et al. does not render unpatentable dependent claim 29 for at least the same reasons given above in support of the patentability of claim 28.

**VII. Rejection of Claims 17 to 21, 30, and 31 Under 35 U.S.C. § 103(a)**

Claims 17 to 21, 30, and 31 were rejected under 35 U.S.C. § 103(a) as unpatentable over the combination of U.S. Patent No. 6,165,633 ("Negishi") and Kawatsu et al. It is respectfully submitted that the combination of Negishi and Kawatsu et al. does not render unpatentable the present claims for the following reasons.

As indicated above, claims 17 and 18 have been amended herein without prejudice to recite that the oxidation device is configured to convert carbon monoxide by a reaction with oxygen of the injected water, and that a reduced amount of a supplemental oxygen containing substance is supplied to the oxidation device based on the oxygen of the injected water. Independent claim 20 has also been amended herein without prejudice in an analogous manner as claims 17 and 18.

As further indicated above, Kawatsu et al. do not disclose, or even suggest the features of claims 17 or 18. Similarly, Kawatsu et al. do not disclose, or even suggest the features of claim 20. Negishi is not relied upon for disclosing or suggesting the limitations of claims 17, 18 and 20 not disclosed or suggested by Kawatsu et al. Indeed, it is respectfully submitted that Negishi does not disclose or suggest the limitations of claims 17, 18, and 20 not disclosed or suggested by Kawatsu et al. It is therefore respectfully submitted that the combination of Kawatsu et al. and Negishi does not render unpatentable claims 17, 18, and 20.

As for claims 19, 30, and 31, which ultimately depend from claim 17 and therefore include all of the limitations of claim 17, it is respectfully submitted that combination of Negishi and Kawatsu et al. does not render unpatentable these dependent claims for at least the same reasons given above in support of the patentability of claim 17.

As for claim 21, which depends from claim 20 and therefore includes all of the limitations of claim 20, it is respectfully submitted that combination of Negishi and Kawatsu et al. does not render unpatentable dependent claim 20 for at least the same reasons given above in support of the patentability of claim 21.

**VIII. Rejection of Claims 17 to 19, 26, 27, 30, and 31 Under 35 U.S.C. § 103(a)**

Claims 17 to 19, 26, 27, 30, and 31 were rejected under 35 U.S.C. § 103(a) as unpatentable over the combination of U.S. Patent No. 6,077,620 ("Pettit") and Kawatsu et al. It is respectfully submitted that the combination of Pettit and Kawatsu et al. does not render unpatentable the present claims for the following reasons.

As indicated above, claims 17 and 18 have been amended herein without prejudice to recite that the oxidation device is configured to convert carbon monoxide by a reaction with oxygen of the injected water, and that a reduced amount of a supplemental oxygen containing substance is supplied to the oxidation device based on the oxygen of the injected water. Independent claim 26 has also been amended herein in an analogous manner as claims 17 and 18.

As further indicated above, Kawatsu et al. do not disclose, or even suggest the features of claims 17 or 18. Similarly, Kawatsu et al. do not disclose, or even suggest the features of claim 26. Pettit is not relied upon for disclosing or suggesting the limitations of claims 17, 18 and 26 not disclosed or suggested by Kawatsu et al. Indeed, it is respectfully submitted that Pettit does not disclose or suggest the limitations of claims 17, 18, and 26 not disclosed or suggested by Kawatsu et al. It is therefore respectfully submitted that the combination of Kawatsu et al. and Pettit does not render unpatentable claims 17, 18, and 26.

As for claims 19, 30, and 31, which ultimately depend from claim 17 and therefore include all of the limitations of claim 17, it is respectfully submitted that combination of Pettit and Kawatsu et al. does not render unpatentable these dependent claims for at least the same reasons given above in support of the patentability of claim 17.

As for claim 27, which depends from claim 26 and therefore includes all of the limitations of claim 26, it is respectfully submitted that combination of Pettit and Kawatsu et al. does not render unpatentable dependent claim 27 for at least the same reasons given above in support of the patentability of claim 26.

**IX. Rejection of Claims 17, 22 to 25, 28 to 30, 32, 34 to 37, and 39 Under 35 U.S.C. § 103(a)**

Claims 17, 22 to 25, 28 to 30, 32, 34 to 37, and 39 were rejected under 35 U.S.C. § 103(a) as unpatentable over the combination of Buswell et al. and Grot et al. It is respectfully submitted that the combination of Buswell et al. and Grot et al. does not render unpatentable the present claims for the following reasons.

As indicated above, claim 17 has been amended herein without prejudice to recite that the oxidation device is configured to convert carbon monoxide by a reaction with oxygen of the injected water, and that a reduced amount of a supplemental oxygen containing substance is supplied to the oxidation device based on the oxygen of the injected water. As further indicated above, claim 28 has been amended herein without prejudice in an analogous manner as claim 17.

As indicated above, Grot et al. do not disclose, or even suggest, all of the limitations of claims 17 and 32. For at least the same reasons set forth above with respect to the patentability of claim 17, Grot et al. similarly do not disclose, or even suggest, all of the limitations of claim 28.

Buswell et al. are not relied upon for disclosing or suggesting the limitations of claims 17, 28, and 32 not disclosed or suggested by Grot et al. Indeed, it is respectfully submitted that Buswell et al. do not disclose or suggest the limitations of claims 17, 28, and 32 not disclosed or suggested by Grot et al. It is therefore respectfully submitted that the combination of Buswell et al. and Grot et al. does not render unpatentable claims 17, 28, and 32.

As for claims 22 to 25, and 30, which ultimately depend from claim 17 and therefore include all the limitations of claim 17, it is respectfully submitted that the combination of Buswell et al. and Grot et al. does not render unpatentable these dependent claims for at least the same reasons set forth above with respect to the patentability of claim 17.

As for claim 29, which depends from claim 28 and therefore includes all the limitations of claim 28, it is respectfully submitted that the combination of Buswell et al. and Grot et al. does not render unpatentable dependent claim 29 for at least the same reasons set forth above with respect to the patentability of claim 28.

As for claims 34 to 37, and 39, which ultimately depend from claim 32 and therefore include all the limitations of claim 32, it is respectfully submitted that the combination of Buswell et al. and Grot et al. does not render unpatentable these dependent claims for at least the same reasons set forth above with respect to the patentability of claim 32.

**X. Rejection of Claims 17 to 19, 26, 27, 30, 31, 33, 35, and 38 to 40 Under 35 U.S.C. § 103(a)**

Claims 17 to 19, 26, 27, 30, 31, 33, 35, and 38 to 40 were rejected under 35 U.S.C. § 103(a) as unpatentable over the combination of Pettit and Grot et al. It is respectfully submitted that the combination of Pettit and Grot et al. does not render unpatentable the present claims for the following reasons.

As indicated above, claims 17 and 18 have been amended herein without prejudice to recite that the oxidation device is configured to convert carbon monoxide by a reaction with oxygen of the injected water, and that a reduced amount of a supplemental oxygen containing substance is supplied to the oxidation device based on the oxygen of the injected water. Claim 26 has been amended herein without prejudice in an analogous manner as claims 17 and 18.

As indicated above, claims 32 and 33 relate to a method for generating electrical energy using a fuel-cell system and recites that water is injected during an oxidizing step, and recites that a supplemental oxygen containing substance is supplied for the oxidizing step. Claim 38 has been amended herein without prejudice in an analogous manner as claims 32 and 33.

As indicated above, Grot et al. do not disclose, or even suggest, all of the limitations of claims 17, 18, 32, and 33. For at least the same reasons set forth above with respect to the patentability of claims 17, 18, 32, and 33, Grot et al. similarly do not disclose, or even suggest, all of the limitations of claims 26 and 38.

Pettit is not relied upon for disclosing or suggesting the limitations of claims 17, 18, 26, 32, 33, and 38 not disclosed or suggested by Grot et al. Indeed, it is respectfully submitted that Pettit does not disclose or suggest the limitations of claims 17, 18, 26, 32, 33, and 38 not disclosed or suggested by Grot et al. It is therefore respectfully submitted that the combination of Pettit and Grot et al. does not render unpatentable claims 17, 18, 26, 32, 33, and 38.



As for claims 19, 30, and 31, which ultimately depend from claim 17 and therefore include all the limitations of claim 17, it is respectfully submitted that the combination of Pettit and Grot et al. does not render unpatentable these dependent claims for at least the same reasons set forth above with respect to the patentability of claim 17.

As for claim 27, which depends from claim 26 and therefore includes all the limitations of claim 26, it is respectfully submitted that the combination of Pettit and Grot et al. does not render unpatentable dependent claim 27 for at least the same reasons set forth above with respect to the patentability of claim 26.

As for claims 35, 39, and 40, which ultimately depend from claim 32 and therefore include all the limitations of claim 32, it is respectfully submitted that the combination of Pettit and Grot et al. does not render unpatentable these dependent claims for at least the same reasons set forth above with respect to the patentability of claim 32.

**XI. Conclusion**

In light of the foregoing, it is respectfully submitted that all of the presently pending claims are in condition for allowance. Prompt reconsideration and allowance of the present application are therefore earnestly solicited.

Dated: July 8, 2004

Respectfully submitted,

By: Richard L. Mayer  
Richard L. Mayer  
Reg. No. 22,490

*R. L. Mayer*  
*42,199*

KENYON & KENYON

One Broadway  
New York, New York 10004  
(212) 425-7200  
CUSTOMER NO 26646